

# YARD & GARDEN REPORT

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## Can you eat rhubarb after a frost?

Record cold temperatures last week damaged landscapes and gardens across the state. Rhubarb plants were actively growing when the frost struck. Although rhubarb tolerates cool temperatures, the severity of the frost threatens the safety and size of our harvest this spring.

Water expands when frozen. When a frost occurs, the water inside the plant cells expands and later explodes out of cell membranes.

We all know rhubarb leaves are toxic. They contain relatively high levels of oxalic acids, which may cause poisoning when large quantities of leaves are eaten. The rupturing of frozen plant cells can cause some of the toxins in the leaves to move into the stalks.

Such severe damage is most likely to occur when temps reach 28 degrees or colder (Fig. 2).

Rhubarb hit by a frost can still be eaten provided the stalks are firm and upright. If the stalks appear soft and mushy, do not eat them.

Look for brown or black discoloration long the leaf edges. In severe cases, the damaged tissue will appear soft and soaked with water. Injury should appear within a few days.

**If you have any doubts, don't eat the stalks. Snap them off. The regrowth that will appear later this spring will be edible.**

It helps to review how toxic rhubarb is. People differ in their sensi-



Fig. 1. Rhubarb can tolerate a light frost. The stalks are edible if they are firm and erect. Frost-damaged stalks will appear soft or mushy. Injured stalks may be toxic and should be snapped off.

tivities, but on average, a 145-pound person would need to eat approximately 11 pounds of rhubarb leaves to suffer death. The elderly, young children, and ill persons are among the most sensitive.

Deaths from eating rhubarb are extremely rare with the exception of British dying from eating rhubarb during World War I. These persons were *encouraged* to eat rhubarb as a substitute for vegetables. Imagine the heartbreak!

Although deaths from rhubarb are rare, small quantities of eating toxic leaves and stalks can cause illness. Common symptoms include weakness, burning in the mouth and throat, nausea and vomiting, and difficulty breathing.

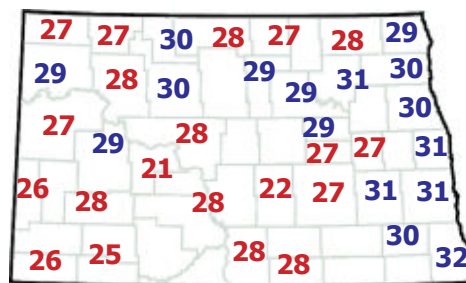


Fig. 2. Frosty temps struck gardens last week. Hard, killing frosts (28°F and below) are highlighted in red.

### INSIDE THIS ISSUE

- ♦ Is rhubarb safe to eat? 1
- ♦ Assessing frost damage 2
- ♦ Wanted: Bug trappers 4
- ♦ Weather almanac 5

## Assessing frost damage in yards and gardens

Jack Frost wreaked havoc in our yards and gardens last week. Many gardeners were left wondering whether their plants survived. If yes, then the long-term effects of the frost raised concerns.

### **Shade trees and leafy shrubs.**

Damaged leaves will show shriveled and brown/black tissues (Fig. 3). Newly emerged leaves are most sensitive to injury. Damaged leaves may eventually drop off the plant.

We expect shade trees and shrubs to overcome this frost. If the new growth is damaged, the plants can respond with a flush of new sprouts within a few weeks. Leaves with brown edges are still functional since the green portions of the leaves contain chlorophyll that produce food for the tree.

**Evergreens.** There seems to be relatively little damage to evergreens. In many cases, they were just starting to open their buds. Damaged plants will show wilting and browning of tips (Figs. 4, 5).

**Perennials.** New growth was damaged but roots and crowns were likely protected from frost. Leaf edges may turn brown or black. In some cases, the damaged tissues will appear watersoaked and may turn white (Fig. 6).

Trim off damaged tissues. If the plants were healthy before the frost, you can expect new growth to emerge from the crowns and roots. Overall growth this year will be stunted.

We had very little snow cover this winter. Many perennials were weak (or dead) before this latest frost. Weak plants that experienced a hard frost might not regrow. The crowns will appear black and mushy.



Fig. 3. Frost injury on oak. Note the shriveled, brown leaf tissues.



Figs. 4, 5. Frost injury on evergreens may include die back and wilting of new growth.



Figs. 6. Frost injury on hosta may include watersoaked and discolored tissues.

**Vegetables.** Our growing season is short to begin with, and some of us take risks in setting out plants early. Sometimes you win; sometime you lose. This spring, we lost. Symptoms of frost injury will include wilting as well as blackened/browned tissue.

Among the most sensitive plants are tomato, pepper, bean, squash, pumpkin and melon.

Some vegetables can survive a light frost (29–32°F). These include pea, beet, carrot, spinach and lettuce. Some vegetables can tolerate even colder temps. These include broccoli, cabbage, radish and kale.

The good news is we are still early in the growing season and can replant now.

**Potato.** This is often the first crop planted in the garden. Damaged plants will be blackened (Fig. 7). The seed tubers and belowground sprouts are usually protected from frost and will usually resprout. Dig a few inches into the ground to confirm the tuber is still firm and the sprouts are green. Frost-nipped sprouts may branch out, creating more but smaller tubers than usual.

**Fruit trees.** There was extensive damage to flower blossoms, but the effects on yields are not yet clear. Fully opened blossoms are more sensitive to damage than blossoms that have not opened. To assess, pry open the blossoms. Dead blossoms will have brown centers (Fig. 10).

At full and post bloom, apple, cherry, pear and plum blossoms will experience 90% bud death at 25, 25, 24 and 23°F, respectively. They will experience 10% bud death at 28°F.

The effect on yield depends on the fruit. To have a full crop of cherries requires well over 50% bud survival, while apples and pears may only need 10–15% bud survival. For now, we will have to wait and see.



Fig. 7. Frost injury on potato. The seed tubers are belowground and usually survive the frost. New sprouts often emerge.



Fig. 8. Frost injury on leaf tips and blossoms of Juneberry.



Figs. 9, 10. Frosted apple blossoms. The ovary has turned brown and died.

## Would you like to be a bug trapper?

The Japanese beetle is one of the most destructive pests in American landscapes. It devours tree leaves, destroys vegetable crops, ravages flowers and shreds turf roots (Figs. 11–14).

The bad news is Japanese beetle has entered North Dakota!

Japanese beetle is already established in Minnesota, South Dakota and Montana, but has struggled to survive in North Dakota due to our brutally cold winters. I never thought I would say this, but thank goodness for our winters! If we can identify any colonies of Japanese beetles and then eradicate them, we can slow the spread of the pest and possibly prevent it from becoming established here.

This is where we need your help!

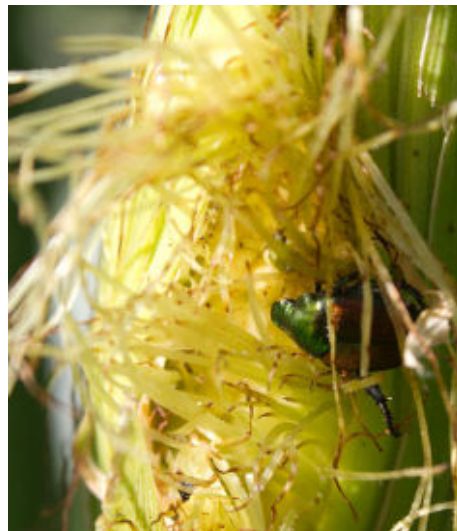
North Dakota State University and the North Dakota Department of Agriculture are looking for volunteers to set up Japanese beetle traps. It's very easy.

Pick up a trap at a designated site in your county. Hang the trap on a tree limb in your yard (Fig. 15) or on a stake in your garden. Leave the trap alone until you take it down in late September and drop it off at the designated site. That's it.

We have about 1,900 traps to hang throughout the state. The first batch of traps have been distributed. Additional volunteers may be used to fill in the gaps of our network. If you would like to join us in trapping this beetle, please register at: <http://goo.gl/forms/S51G97jDRR>. We will contact you within two weeks if we need your assistance.

Thanks in advance for your service to gardeners across the state!

*Updated May 29, 2015.*



*Figs. 11–15. The ND Dept. of Agriculture and NDSU are seeking volunteers to trap Japanese beetles. The pest skeletonizes leaves of trees and shrubs (top row), destroys vegetable crops such as corn, and damages flowers. Our goal is to eradicate the pest before it becomes established.*

# Weather Almanac for May 15–21, 2015

Site	TEMPERATURE				RAINFALL				GROWING DEGREE DAYS <sup>1,2</sup>			
	Week				Week		2015		Week		2015	
	Avg	Norm	Max	Min	Total	Norm	Total	Norm	Total	Norm	Total	Norm
Bottineau	48	55	74	28	1.88	0.52	3.16	4.36	35	54	111	163
Bowman	47	54	72	26	0.36	0.57	2.50	4.69	35	48	99	143
Carrington	48	56	71	27	2.56	0.67	4.80	4.69	35	59	115	175
Crosby	48	53	76	27	1.12	0.50	1.56	3.64	32	49	106	144
Dickinson	48	54	71	28	0.45	0.54	2.27	4.36	34	53	107	156
Fargo	51	58	71	31	2.66	0.67	6.30	5.78	44	62	142	186
Grafton	50	59	74	30	2.76	0.62	5.70	4.82	40	61	121	177
Grand Forks	50	56	73	30	1.64	0.64	3.82	4.76	41	59	134	173
Hazen	47	57	77	21	0.93	0.56	2.75	4.55	36	64	123	195
Hillsboro	51	57	72	31	1.77	0.64	4.24	5.39	40	59	130	173
Jamestown	50	56	72	27	2.64	0.66	5.58	4.68	38	56	122	165
Langdon	48	52	73	28	1.59	0.64	3.69	4.22	35	45	102	128
Mandan	50	56	77	28	1.66	0.62	4.52	4.29	39	54	134	158
Minot	48	55	74	30	1.84	0.62	3.41	5.02	31	49	102	144
Mott	48	54	72	25	0.73	0.59	2.95	5.50	37	54	116	161
Rugby	48	54	73	29	1.30	0.68	2.60	5.14	36	57	113	169
Wahpeton	51	59	72	32	1.26	0.74	4.05	5.87	45	66	143	198
Watford City	48	54	76	27	0.40	0.54	1.03	3.73	34	54	113	161
Williston	49	57	75	29	0.77	0.48	1.65	3.62	33	63	121	192
Wishek	48	54	73	28	1.39	0.61	5.87	6.07	33	49	113	148

## DAYLENGTH (May 21, McClusky, center of ND)<sup>3</sup>

Sunrise: 5:59 AM | Daylength: 15h 19m  
 Sunset: 9:18 PM | Change since May 14: +17m

## LONG-TERM OUTLOOKS<sup>4</sup>

6–10 Day: Temp: Above Normal; Precipitation: Above Normal  
 8–14 Day: Temp: Above Normal; Precipitation: Above Normal

<sup>1</sup> GDDs for garden vegetables are not available. GDD data in this table are for corn, which responds to temperature as most vegetables grown in gardens. Data begin May 1 with base minimum and maximum temperatures of 50 and 86°F., respectively.

<sup>2,3,4</sup> Sources: North Dakota Agricultural Weather Network, [www.sunrisesunset.com](http://www.sunrisesunset.com), and National Weather Service, respectively.

## Credits

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